outward as is usual with the genus; longer spur of posterior tibiae one half length of its metatarsal joint.

Length: head and thorax 4.64 mm., abdomen 3.5 mm., forewing 5.7 mm., rear wing 4.1 mm.

Holotype female: Vinita Indian T., June 7–8, 1899, Wickham (Am. Museum).

This species will run to couplet 2 in my recent key to the genus [1] and can be separated from congrua (Cresson) as follows:

2. Abdomen completely red; legs and spurs black except fore tibiae yellowish.....*congrua* (Cresson)
2a. Abdomen completely yellowish red; legs and spurs completely yellowish red, same color as abdomen....*lutea* n. sp.

Concerning the Genotypes of Bothropolys, Polybothrus and Eupolybothrus (Chilopoda: Lithobiomorpha: Lithobiidae)

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My excuse for the present discussion is to begin the attempt to clarify the nomenclatorial status of the various generic names now attributable to the lithobiomorphous Ethypolyinae, a group whose zoological organization seems much better understood than does that of the troublesome and difficult Lithobiinae. I hope that this and subsequent studies will facilitate further work upon the material entities invloved in perhaps the one section of the order where there seems to be some chance of our arriving at a satisfactory generic interpretation in the foreseeable future. But until we can be sure of the labels that we must attach to the physical objects of our investigations, the problems at hand will continue to prove, if not impossible, at least chaotic.

Undoubtedly the focus of the difficulty lies in Latzel's Poltergeist genus *Polybothrus* and in certain authors'—notably Verhoeff's—reluctance to exorcise it from the premises once and for all. Briefly stated the problem is this. In 1862 [1] H. C.

[1] Journ. Acad. Nat. Sci. Philadelphia, (n.s.) V, p. 15.

Wood in this country proposed a new genus, *Bothropolys,* for the reception of three new species, *nobilis, xanti,* and *bipunctatus.* Of these *nobilis* was later shown to be a synonym of an earlier name, *Lithobius multidentatus* Newport, 1844. To the best of my knowledge the first attempt to fix the genotype of *Bothropolys* was undertaken by Chamberlin, who in 1912[2] selected "*B. multidentatus* (Newport)" as the type. At first glance there seems to be justification for his action, for Wood himself had admitted later that his *nobilis* was really referable to the earlier Newport species. However, *multidentatus* was not available for consideration as the genotype of *Bothropolys* because that particular name had not been included by Wood in the original description of his 1862 genus. *The type species of a genus is a nomenclatorial, not a zoological species;* it is but a name on paper that is only indirectly and quite subjectively associated with all of the specimens to which it seems to apply (with the exception of the holotypical specimen to which it applies directly and objectively). The fact that everyone agrees that *multidentatus* is a senior synonym of *nobilis* can have no real bearing upon the question of the fixation of the nomenclatorial genotype, for in this instance the type of the genus can be determined objectively. To conclude that *multidentatus* is the type of *Bothropolys* is strictly a subjective interpretation and as such is always subject to revision. Had Chamberlin in 1912 designated *Bothropolys nobilis* as the type species and clarified the pertinent synonymy, his action would have been acceptable. The genotype of *Bothropolys* is *Bothropolys nobilis* Wood, 1862 (an objective fact), which species we believe to be the junior synonym of *Lithobius multidentatus* Newport, 1844 (a subjective interpretation).

In 1880[3] Latzel in Vienna declared *Bothropolys* to be, although "natural" and zoologically justifiable, etymologically objectionable ("falsch gebildet") because of the relative positions of the word's two constituent parts. Accordingly, he transposed them to form a substitute name, *Polybothrus.* Al-

[2] Can. Ent., XLIV, p. 173.

[3] Myriap. Öst.-Ung. Monarchie, p. 35.

though Chamberlin pointed out in 1925 and again in 1952 [4] that Latzel's action could not be justified and that his new name represents an invalid emendation of *Bothropolys, Polybothrus* has been used, primarily in Europe, regularly until almost the present time. And on the authority of the recently enacted "Copenhagen Decisions on Zoological Nomenclature" (pp. 44–45, PP. 71 and 72) *Polybothrus* may be seen to be an Invalid Emendation and junior objective synonym of the older Wood name. Therefore, inasmuch as *nobilis* (zoologically equal to *multidentatus*) is the genotype of *Bothropolys* (by present designation), the same species, *nobilis,* is *ipso facto* the type of *Polybothrus,* for if an emendation is proposed to replace an older name, the type of either when established becomes the type of the other.

In 1907 [5] another source of confusion was introduced by Verhoeff's proposal of seven subgenera which he distributed between the invalid *Polybothrus* and the valid *Bothropolys*; at the time he considered each genus valid. He presented his subgenera quite casually in two keys, one for *Polybothrus,* one for *Bothropolys,* but he referred no species by name or by indirection to any one of them. In 1925 (op. cit.) Chamberlin stated that these subgenera are "difficult to apply and also really without standing" because no species were originally associated with them; consequently he rejected them all as *nomina nuda.* But he rescued one name, *Eupolybothrus,* called it a new genus, and designated *Lithobius grossipes* L. Koch, 1862 [6] as its genotype. However, none of Verhoeff's subgenera is a *nomen nudum,* for they were originally published with key characterizations. Therefore the Verhoeff subgenera are available. *Eupolybothrus* was validated by Chamberlin in 1925, its genotype is *Lithobius grossipes* L. Koch, 1862, but it must be attributed to Verhoeff, 1907, not to Chamberlin, 1925.

Following is a summary of the conclusions reached in the foregoing account.

[4] 1925, Bull. Mus. Comp. Zool. Harvard, LVII, p. 386. 1952, Revue Fac. Sci. Univ. D'Istanbul, (B) XVII (3), p. 211.

[5] Bronns Klassen u. Ordnungen, V, p. 241.

[6] Die Myriap. Gattung Lithobius, pp. 27 and 32.

Bothropolys Wood, 1862.
Type: *Bothropolys nobilis* Wood, 1862.
Method of fixation: by present designation.
Subjective status of type species: equal to *Bothropolys multidentatus* (Newport), 1844.

Polybothrus Latzel, 1880.
Type: *Bothropolys nobilis* Wood, 1862.
Method of fixation: through objective synonymy with *Bothropolys* whose type, *nobilis*, is here fixed. (Isogenotypic through synonymy.)

Eupolybothrus Verhoeff, 1907. (Proposed without included species.)
Type: *Lithobius grossipes* L. Koch, 1862.
Method of fixation: by the subsequent designation of Chamberlin (1925) and through his inclusion (1925) in the genus of a single, initial species, *grossipes*.

Review

Needham, J. G. and M. J. Westfall, Jr. 1955. A Manual of the Dragonflies of North America (Anisoptera), including the Greater Antilles and the Provinces of the Mexican Border. University of California Press, Berkeley and Los Angeles. xii + 615 pp. $12.50.

Enthusiasts of few orders of insects have been so fortunate as those interested in the taxonomy and ecology of the Odonata. This order, in North America, has been the subject of two recent works (for a review of the first see Ent. News LXV:109), the second of which is the volume now being reviewed. This delightfully written and superbly illustrated book is a pleasing blend of fine prose, accurate information and stimulation to both learning and observing. It is written in such a style as to be available to the interested layman and student alike. The initial chapter treats the external morphology of adult and larval anisopterans with particular attention being paid to the structures of taxonomic significance. Ecological facts are interpolated with morphological ones in this chapter as well as in the following one which is called "field studies." This section is devoted to behavior patterns and the collection and preservation